



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO.         | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------|-------------|----------------------|---------------------|------------------|
| 10/641,703              | 08/15/2003  | Warren Kelm          | 1910-A-CIP          | 9962             |
| 27542                   | 7590        | 02/13/2006           | EXAMINER            |                  |
| SAND & SEBOLT           |             |                      | BOMAR, THOMAS S     |                  |
| AEGIS TOWER, SUITE 1100 |             |                      |                     |                  |
| 4940 MUNSON STREET, NW  |             |                      | ART UNIT            | PAPER NUMBER     |
| CANTON, OH 44718-3615   |             |                      |                     | 3672             |

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/641,703             | KELM, WARREN        |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Shane Bomar            | 3672                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 25 November 2005.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-24 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____ .  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/25/05</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____ .                                  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-24 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a pair of bearing housings directly connected to only one end of a pair of auger flights, does not reasonably provide enablement for a pair of bearing housings only provided or disposed at only one end of a pair of auger flights. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Analysis of Figure 1 clearly shows that bearing housings are provided or disposed at each end of the auger flights. The words “provided” or “disposed” are very broad terms and do not convey the direct connection of a bearing housing at only one end of a flight that is better shown in Figures 2-4. Furthermore, claim 14 states that the bearing housing connects a pair of adjacent flights together. Conversely, the detailed description is non-enabling of such a feature because Figure 4 shows that connector 198 connects pairs of adjacent flights together, not the bearing housing.

Claims 2-13 and 15-24 that depend from either of base claims 1 and 14 are also similarly rejected.

Art Unit: 3672

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 14, both preambles are first directed to the sub-combination of an auger flight support and then to the combination of an auger flight support with, among other things, a plurality of parallel auger flights in an attempt to claim a sub-combination and a combination in one claim. While this in itself is not improper, these claims do not properly tie the sub-combination and combination together in such a way so that one of ordinary skill in the art would know what is actually and definitely being claimed. A suggested solution would be to simply begin the preamble with “An auger flight support assembly...” or “An auger flight support in combination with ...”.

Claims 2-13 and 15-24 depend from either of base claims 1 and 14 are also considered indefinite.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent 4,036,529 to Hawthorne et al in view of US patent 4,217,980 to Kemp, Jr.

Regarding claims 1 and 14, as best understood, Hawthorne et al teach an auger flight support for supporting a plurality of auger flights 44, 45 by connecting together respective first ends of parallel auger flights, the auger flights each having a respective helical flighting affixed exteriorly therearound and having a respective outer diameter 46 and respective second ends having drive socket, the auger flights being adapted for use with an augering apparatus of the type used for rotating and advancing a plurality of side-by-side cutting heads of a drilling section, the drilling section which is driven horizontally into the side of a hill with the cutting heads driven rotationally through the drive sockets by the augering apparatus (see column 2, line 67 through column 3, line 4), the unitized auger flights being inserted between the drilling section and the augering apparatus in a rotationally coupled end-to-end manner as drilling progresses (see column 3, lines 42-47), the auger flight support comprising: a pair of bearing housings 49 and 50; a pair of drive shafts 42,43 each having a first end 47 adapted to closely fit within and be affixable to the first end portion of a respective flight auger, a second end portion of mating configuration to the drive sockets, and a middle bearing portion which fits within the bearing housing (this middle bearing portion is inherent from Figs. 2 and 4); inherently at least one bearing is disposed within each of the bearing housings 49, 50 between the respective bearing housing and the bearing portion of the respective drive shaft, wherein the at least one bearing rotationally supports and longitudinally retains the respective drive shaft to the bearing housing (see Figs. 2-4); a tie bar 55 interconnects the bearing housings at such a spacing that the respective of the outer boring diameters of the flightings are closely adjacent one another (see

Figs. 2 and 4); and a support leg extends downwardly to engage the surface of the ground lying between the parallel auger flights (see Figs. 7 and 9). However, it is not explicitly taught that the bearing housings are only provided at only one end of the auger flights, or that the support leg extends downwardly from the mid-section of the tie bar.

In regards to the tie bar extending downwardly from the mid-section of the tie bar, Hawthorne et al alone could be easily modified to achieve this result. In one embodiment, Hawthorne et al show support legs 65 and 69 extending downwardly from the bearing housings 49 and 50, which, when connected to the tie bar, essentially become a part of the tie bar, the support legs engaging the surface below each flight (see Figs. 2-4). In another embodiment, support legs 65 and 69 extend downwardly to engage the surface of the ground lying between the parallel auger flights (see Figs. 8 and 9), although the legs are said to extend down from support member 17. At the time the invention was made, it would have been obvious to one of ordinary skill in the art that support legs 65 and 69 from Figures 8 and 9 could be made to extend downward from the tie bar 55 and still achieve the same results of the previous embodiments. One would have been motivated to make such a change since a) the bearing housings and tie bar of Figure 4 are known to be able to support the auger flights and b) support of the parallel flights on the ground between the flights is sometimes necessary, then it would be obvious and notoriously known to simply connect one of the support legs from the Figure 8 embodiment to tie bar 55 via a known connection technique.

Kemp teaches an auger flight support similar to that of Hawthorne et al. It is further taught that a bearing housing 27 is only at one end of an auger flight 33. As seen in Figures 2 and 5, one end of flight 33 has a drive shaft 15 extending outwardly therefrom, while the end of

flight 32 is open to receive the shaft 15. Therefore, bearing housing 27 is only connected to one end of an auger flight. It would have been obvious to one of ordinary skill in the art, having the teachings of Hawthorne et al and Kemp before him at the time the invention was made, to modify the auger flight support assembly taught by Hawthorne et al to include the need of only one bearing housing at an end of an auger flight, as taught by Kemp, in order to obtain a support assembly that requires less parts to use and maintain the assembly. One would have been motivated to make such a combination because the redundancy of having two pairs of bearings longitudinally adjacent each other when two sets of auger flights are connected together, as taught by Hawthorne et al, would have been eliminated, and the assembly would require fewer parts, and therefore lower cost, to build and maintain the assembly.

Regarding claims 2, 3, 8, and 18, the combination applied to claims 1 and 14 above teaches that said support leg is disposed on said tie bar at such a position that allows said support leg to be disposed at substantially the center of gravity of the parallel augers, the position being equidistant from each of the flights and approximately midway along the tie bar (see Fig. 9 of Hawthorne et al).

Regarding claims 4 and 16, the combination applied to claims 3 and 14 above teaches that said tie bar would obviously include a downwardly depending leg mounting block disposed approximately midway along the length of said tie bar so that said support leg is secured to said mounting block (see Figs. 3 and 9 of Hawthorne et al).

Regarding claims 5, 6, and 17, the combination applied to claims 4 and 16 above teaches that it would be obvious that the support leg is releasably secured to the mounting block, such as with a nut and bolt, since it is notoriously known in the art to releasably mount items that may

deteriorate with wear and require replacement. For example, skids 71 are shown mounted to a plate 70 with nuts and bolts (see Fig. 8 of Hawthorne et al).

Regarding claims 7 and 15, the combination applied to claims 1 and 14 above teaches that it would be obvious that the support leg and the tie bar are integrally formed since such is notoriously known in the art (see Fig. 4 of Hawthorne et al wherein it appears that support leg 65 is made integral with the bearing housing).

Regarding claim 9, the combination applied to claim 1 above teaches that said support leg is adapted to contact the raised ledge of ground formed between the rotating parallel auger flights (see Fig. 9 of Hawthorne et al).

Regarding claims 10, 11, 19, and 20, the combination applied to claims 9 and 14 above teaches that said support leg further includes a foot plate 71 and the foot plate is adapted to contact the ledge of the ground between the auger flights, wherein the width of the foot plate is greater than the width of the support leg (see Figs. 8 and 9 of Hawthorne et al).

Regarding claims 12 and 21, the combination applied to claims 9 and 14 above teaches that said support leg is shorter in length than the diameter of the auger flights (see Fig. 9 of Hawthorne et al).

Regarding claims 13 and 22, the combination applied to claims 1 and 21 above teaches that said support leg is substantially parallel in an assembled position to the auger flights (see Fig. 9 of Hawthorne et al).

Regarding claims 23 and 24, the combination applied to claims 1 and 14 above teaches that it would have been obvious to one of ordinary skill in the art to provide recesses on the drive shafts 48 taught by Hawthorne et al because weight reduction of movable mining parts has

always been an important design factor so that equipment can be more easily maneuverable and to help in possibly reducing injuries. Evidence for reducing the weight of drive shafts in general is seen in column 1, lines 46-50 of US 6,319,134 to Menosky et al; in column 2, lines 58-60 of US 6,033,310 to Faulkenberry; and in paragraph [0028] in the computer translated description of JP 09209927A.

***Response to Arguments***

7. Applicant's arguments with respect to claims 1 and 14 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Coats et al, Forsberg, and Letts teach other augers with bearings and connections of interest.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

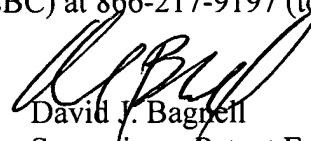
Art Unit: 3672

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 6:30am to 4:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David J. Bagnell  
Supervisory/Patent Examiner  
Art Unit 3672

tsb   
January 24, 2006